

Amendments to the Specification

Please replace paragraph [0180] in the originally filed specification with the following amended paragraph.

[0180] An alternative embodiment incorporates both closed loop control and open-loop control of therapy in the implanted portion [[950]] 953 with added features being supported by an external component, e.g., external portion 950 or external wearable signal processor 1425. In the embodiment, the external portion [[953]] 950 operates in conjunction with the implanted portion 953 to provide an added function. For example, the external portion 950 may receive neurological data from the implanted portion 953 through a communications channel (e.g., a hardwire or a telemetry link) and support an added feature in accordance with the neurological data. The added feature may enhance functionality that is provided by an implanted component and may provide additional functionality to the medical device system. Examples of corresponding added features may include loop recording of segments of signals obtained from sensors such as EEG, emergency care features such as sounding an alarm or providing a cue to warn the patient of an impending medical condition, and making a cell phone telephone call to a care giver or health care professional if the medical condition of the patient changes. Additional information may be included with the neurological data and may be indicative of the patient's location, where the location may be determined by a Global Positioning System (GPS) receiver that interfaces with the medical device system. Activation of a loop recording function may be established by the physician or by a caregiver or patient with physician guidance using a programmer, e.g., the programmer 1021. Loop recording causes a segment of one or more monitored signals occurring around an automatically detected event or selected by the user to be stored in a memory. Programming of implanted portion 953 includes communicating over a communications channel using programmer 1021. The messages sent from programmer 1021 to implanted portion 953 include instructions, parameters, and/or firmware algorithms that establish conditions under which the loop recording is activated. Exemplary conditions that may initiate loop recording including recognition of specific characteristics of monitored signals such as the occurrence of a neurological event, established by the physician in general or specifically for the individual and programmed into the memory of the implanted portion 953. Conditions may also include manual triggers activated by the patient or caregiver or specific times of the day when

loop recording should occur. Conditions for loop recording may also include certain types of errors or aberrant monitored signals such as those recognized by signal quality control algorithms that may be stored for later analysis. Manual triggers activated by the patient or caregiver may include, but are not limited to, subjective or visible manifestations of an event, or the point in time when a treatment therapy is delivered triggering storage of the signals after an appropriate time delay or when meals or beverages are consumed that may affect the physiological parameter being sensed by sensors in implantable device 953.